

## Tourism Information Packaging and Promotion, the GIS Approach--the Case of Jomoro District of Ghana

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### Abstract

The importance of tourism to the economic development of countries cannot be overemphasized. All activities involved in tourism are based on information, so it is largely an information product. In spite of the immense benefits to be derived, the industry has not received the needed boost in terms of investments. This is because information about tourists' sites are not properly organized, packaged and marketed. Most of the information about the industry is in text form which does not contain the basic information that tourists and investors require in order to make informed decisions. The research seeks to study and explore the use of ICT to packaging tourism information using GIS with the view to enhancing tourism information packaging, promotion and development in Ghana using the Jomoro district as a case study. It further seeks to explore how GIS technology can be used for tourism data acquisition, compilation, storage, construction and output for presentation in map form with text embedded in them, in order to enhance tourism promotion and development in the country.

### Introduction

"Tourism is a composite of activities, facilities, services and industries that deliver a travel experience, that is, transportation, accommodation, eating and drinking establishments, entertainment, recreation, historical and cultural experiences, destination attractions, shopping and other services available to travelers away from home." (Tourism and Leisure Committee, 1997)

According to the World Travel and Tourism Council, tourism and its related economic activities generates 11 per cent of Global Gross Domestic Product, employs 200 million people, transport nearly 700 million international travelers per year.

Tourism is one of the most dynamic economic sectors in many developing countries. International tourism revenues in developing countries have increased from US\$43 billion to US\$222 billion, from 1990 to 2006, a fivefold increase, with a growth rate of 416% compared to a global rate of 177 %, (UNWTO, 2008).

A research conducted by the World Travel and Tourism Council (WTTC, 2010) showed that in Ghana, Travel and Tourism accounted for 6.7% or US\$1,217.8million of the GDP in 2010, and it is expected to rise to 7.3% or US\$3,400.7million by the year 2020. The sector accounted for 288,000 or 5.4% of total employment i.e. one in every 18.5 jobs in 2010, and this is expected to rise to 393,000 or 5.9% of total jobs thus one in every 16.8 jobs by 2020. In terms of foreign exchange earnings from the tourism sector in 2010, 13.9% or US\$1,017.8million of total export accrued from the tourism sector. This figure is expected to rise to 14.4% or US\$2,615.1million by 2020. In sum, the tourism sector plays a key role in the development of the Ghanaian economy.

### Background

The role of tourism and its contribution to the development of the Ghanaian economy is not in dispute. However, the industry has not received the needed boost in terms of investments either public or private, (Teye .V, 2000). Information about tourists sites are not properly organized, packaged and marketed. Without doubt some of the information which is mostly in text form does not contain the basic information that tourists and investors require in order to make informed decisions. Additionally, basic infrastructure such as roads to sites of attractions, and other social amenities for example accommodation, communication facilities, financial institutions and electricity are inadequate if not absent, (Ghana National Commission for UNESCO 2010).

Added to the inadequate text information on tourism is the paucity of tourism maps at the national, regional and district levels. Apart from a few outdated national tourism maps, regional tourist maps are hard to find let alone to talk of district tourist maps, which are not available. Information on tourism exists in disparate

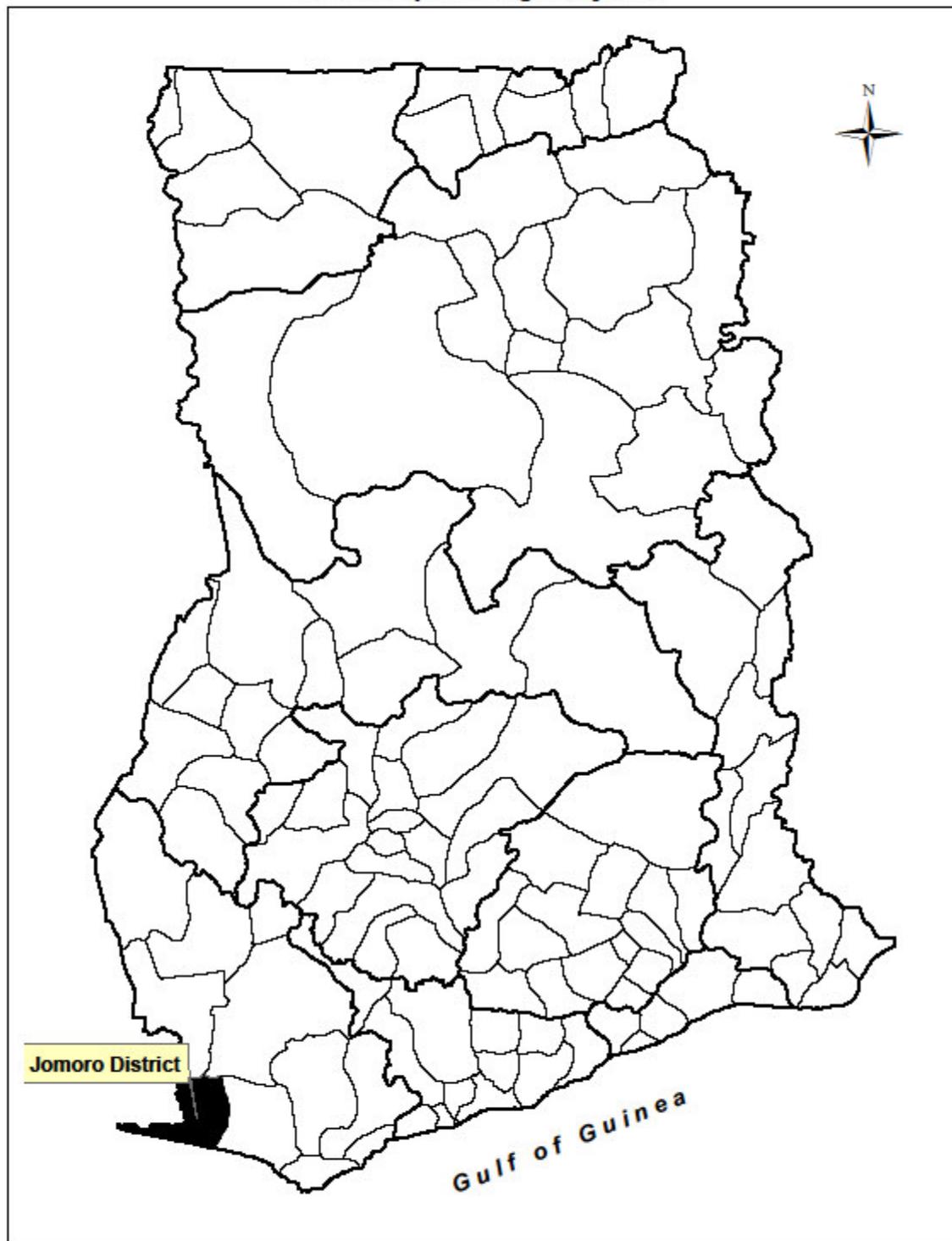
forms in different locations and appears to be hurriedly put together only when found expedient. Even then they are found mostly in text form. The bulk of tourism data and information is mostly collected and stored in hard copy format which gets lost after a while

Unfortunately, there is no one stop shop where tourists or researchers can obtain information concerning tourism related issues. Again, difficulties exist in updating existing graphical tourist guides and maps since this would have to be done manually. There is also the lack of digital database of tourist facilities and destinations.

The research seeks to study and explore the use of ICT to packaging tourism information using ArcGIS 10.1 software with the view to enhancing tourism information packaging, promotion and development in Ghana. It further seeks to explore how GIS technology can be used for tourism data acquisition, compilation, storage, construction and output for presentation in map form with text embedded in them, in order to enhance tourism promotion and development in the country.

The study is a case type focused on Jomoro District of Ghana. This district is found in the western region of Ghana as shown in Figure 1. The district has a high potential for tourism development but basic infrastructure required to make tourism attractive in the district is absent. As a matter of fact much of the district is inaccessible as a result of the topography, largely posed by marshlands, areas liable to flood and lagoons. The study identified and classified the tourists' attractions in the district. The existing infrastructures that link these tourist attractions were also examined including social amenities that are available to take care of tourists who visit such places, e.g. hotels, restaurants/ bars etc.

**Ghana Map showing Study Area**



**Fig. 1**  
**Why Maps and GIS**

Maps and tourism are inseparable. From early adventurers who used rudimentary maps and charts to explore "new" worlds, to the modern-day tourist who uses a travel map to navigate within a chosen destination, maps play a significant role in how we discover, learn, and communicate information about the world around us (Erin 2002).

By definition, tourism involves travel to a place where the tourist normally does not work or live. Therefore, the traveler has limited spatial knowledge of the visited environment and maps perform an essential function in the acquisition of spatial information by tourists.

Maps perform a valuable function throughout the entire tourism process. They are a source of inspiration and daydreaming about future travel destinations. Maps may be used by tourists in the decision-making stage in order to visualize and imagine potential destinations. They may be used in the trip-planning phase, to decide where to travel and within the selected destination, where to stay, which attractions to visit, and even which neighbourhoods or regions to avoid. They are used during travel, to assist with navigation and orientation. And maps may be used after traveling, to remember places visited, or to help with post-trip visualization and reminiscence (Erin 2002).

Maps are fundamental vehicles for communicating spatial information and creating images of space and place. Just as a "picture is worth a thousand words," a well-designed map can speak volumes about a travel destination. In summary, maps are important part of most tourism experiences, and it makes intuitive sense that maps should be part of any marketing campaign promoting a travel destination (Erin 2002).

In essence, maps have the capacity to adequately capture information that would otherwise require several pages of written text to explain. Maps are instruments for recording, calculating, displaying and analyzing spatial phenomena.

Tourism planning and management involves multiple agencies and different kind of information in order to assist a quite complex decision making process. Therefore, GIS ability, to integrate, store, and manipulate different data sets—qualitative and quantitative, spatial and non-spatial, may prove very useful (Bahaire and Elliott-White, 1999).

Geographic Information Systems (GIS), is a computer-based tool for mapping and analyzing events and places on the earth's surface. GIS integrates common data base operations, which include query as well as statistical analysis of the data, and the geographical analysis with better visualization than is achievable with ordinary cartographic maps. GIS has the power to not only to create maps, but also integrate different information and visualize scenarios, present ideas, and provide solutions for complicated problems. GIS performs six tasks which include data input, data manipulation, data management, query and analysis, and finally visualization. Another competitive advantage of GIS technology is that, because of its adaptiveness to add or remove thematic layers, it is a dynamic tool for planners, capable of being adjusted as new data become available and as tastes and preferences in demand change over time, (Beedasy and Whyatt, 1999)

GIS is used to display and analyze spatial data which are linked to databases. This connection between spatial data and databases is the driving force behind the working of GIS. Maps can be drawn from the database and data can be referenced from the maps. When the database is updated, the associated map also gets updated. On a GIS platform, information or data update is also very easy since maps drawn are digital.

### **Method of study**

The procedure for developing a GIS Database is summarized as follows:

- Acquisition and conversion of analogue map to digital format through scanning and digitizing.
- Creation of relational tabular database with their attributes with shape files in ArcGIS
- Creation of GIS database for Tourism with capabilities for queries.
- Map design, composition and symbolization

A model framework used for tourism information mapping relating to this study is illustrated in Fig. 2.

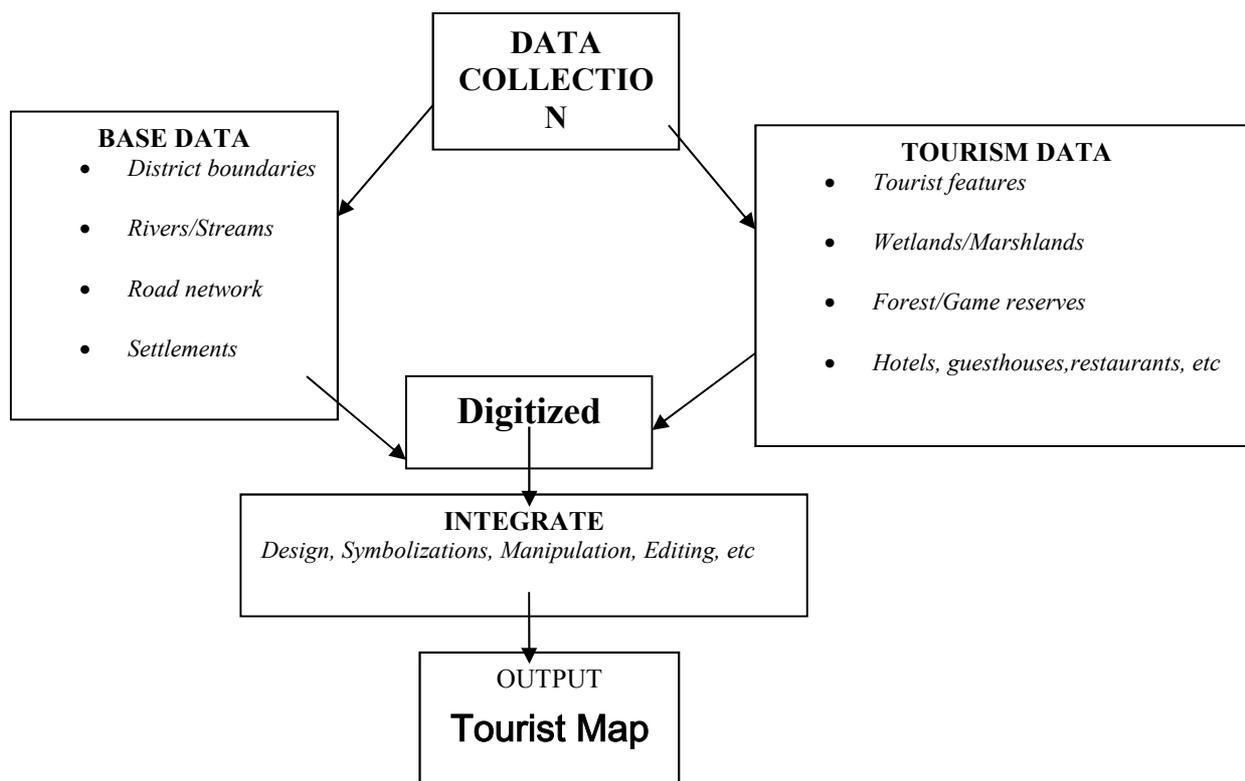


Fig. 2. Framework for the Study

### Creation of a Spatial Database

The steps followed in the development of the spatial database include the following

- acquiring an analogue map of the Jomoro district from the Survey Department of Ghana
- field check to authenticate the existence of tourist features (to make sure the source information is accurate)
- converting the analogue map into computer readable format by firstly scanning, georeferencing and finally onscreen digitizing
- editing to remove errors
- transformation into real world coordinates

The digital map was further processed using GIS software, ArcGIS 10.1. Suitable symbols were assigned to tourist features based on categories with appropriate labels, for easy visualization.

For the purpose of this study, three spatial features were identified and digitized. They are,

- a) point features:- these are features of individual tourist attractions, for example a statue in a park or settlements,
- b) line features which include coastal beaches and road network , whiles,
- c) game and forest reserves, groves, lakes were captured as polygon/area features.

A study of this kind involves extensive and multisource data gatherings which include primary data as well as secondary data. However, a bulk of data was obtained through secondary sources, especially all the tourism related data was gathered from publications, brochures, from the Ministry of tourism and some pamphlets from the district assembly. There was a field trip to the district to verify and authenticate the existence of these tourist features. In cases where tourist features might have undergone some modifications the necessary updates were done.

Data acquired were geographical thus, spatial and attribute data. Spatial data is the type of information that identifies the geographic location of features. They are usually stored as coordinates and topology, and is data that can be mapped. Attribute data, however, can be defined as any readable information including qualitative data that can be counted for recording and analysis purposes. It is also descriptive information of geographic characteristics of features and their relationships to each other). Such data helped in building up the attribute data of the spatial data (Abdul Ghapar, et al, 2010).

### Identification and Classification of tourist features in Jomoro District

Tourist features within the Jomoro District were classified according to the following criteria and Fig. 3. Shows the processes of map composition and design

*Natural Attractions*

- a) Ankasa Resource Reserve
- b) Amanzulley Wetlands and Lagoons

*Religious/Cultural*

- a) Catholic Grotto
- b) Shrine
- c) Village on Water
- d) Festival towns

*Historical*

- a) Fort Apollonian

*Others*

- a) Osagyefo Power Batch
- b) Hotels/Guesthouses

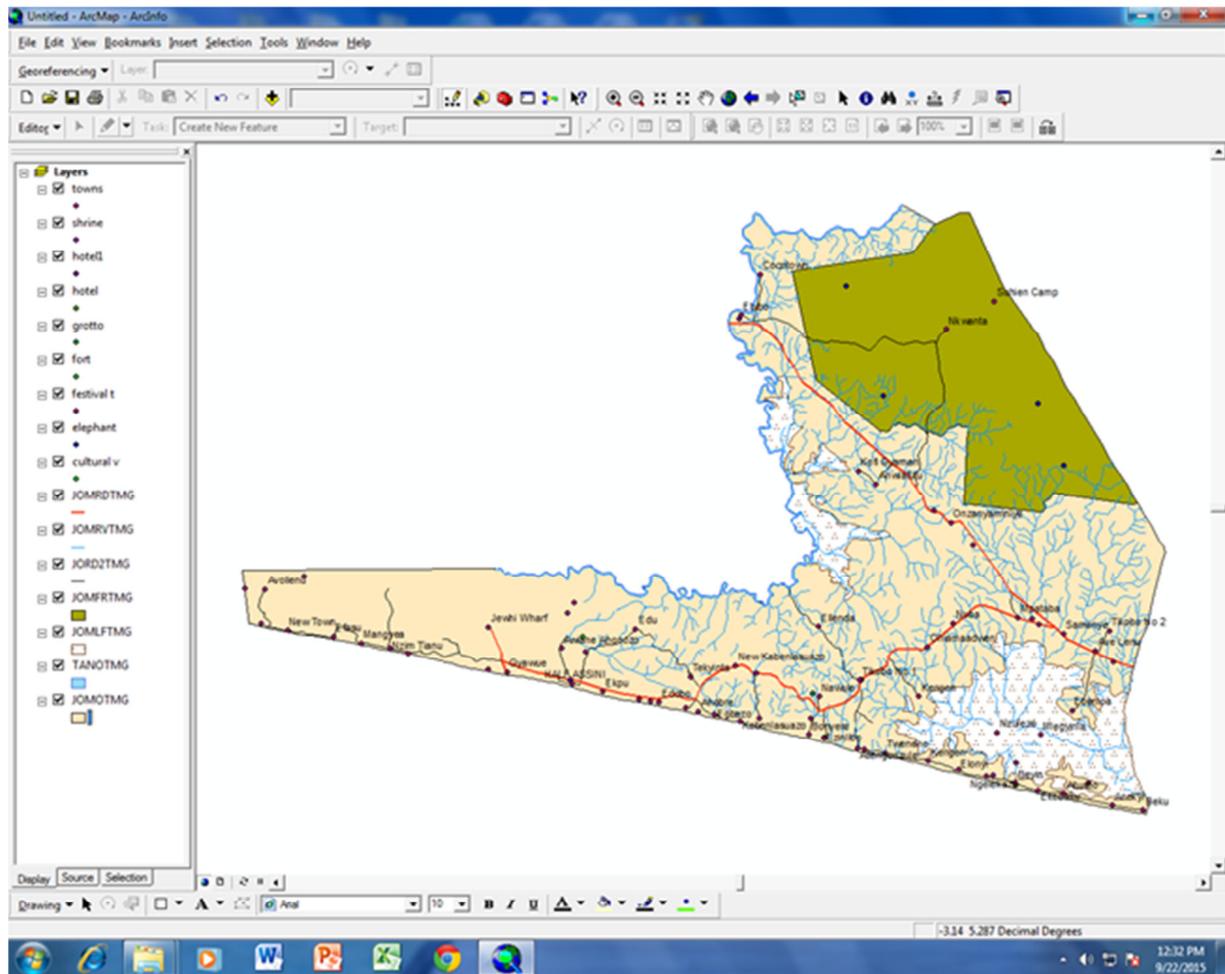


Fig.3 Map composition, design and Symbolization

**Tourism Resources and Sites in the Jomoro district**

There were a variety of natural attractions in the district among these is Amanzulley wetland which is home to a variety of animals including crocodiles, monkeys, marine turtles and birds. The Ankasa Resource Reserve which is described as Ghana's most special forest with the Highest Genetic Heat Index. A very important tourist attraction in this district is a village called Nzuleso which is a settlement built on water. Figure 4, shows a complete tourist map of the district with fact files embedded in it.

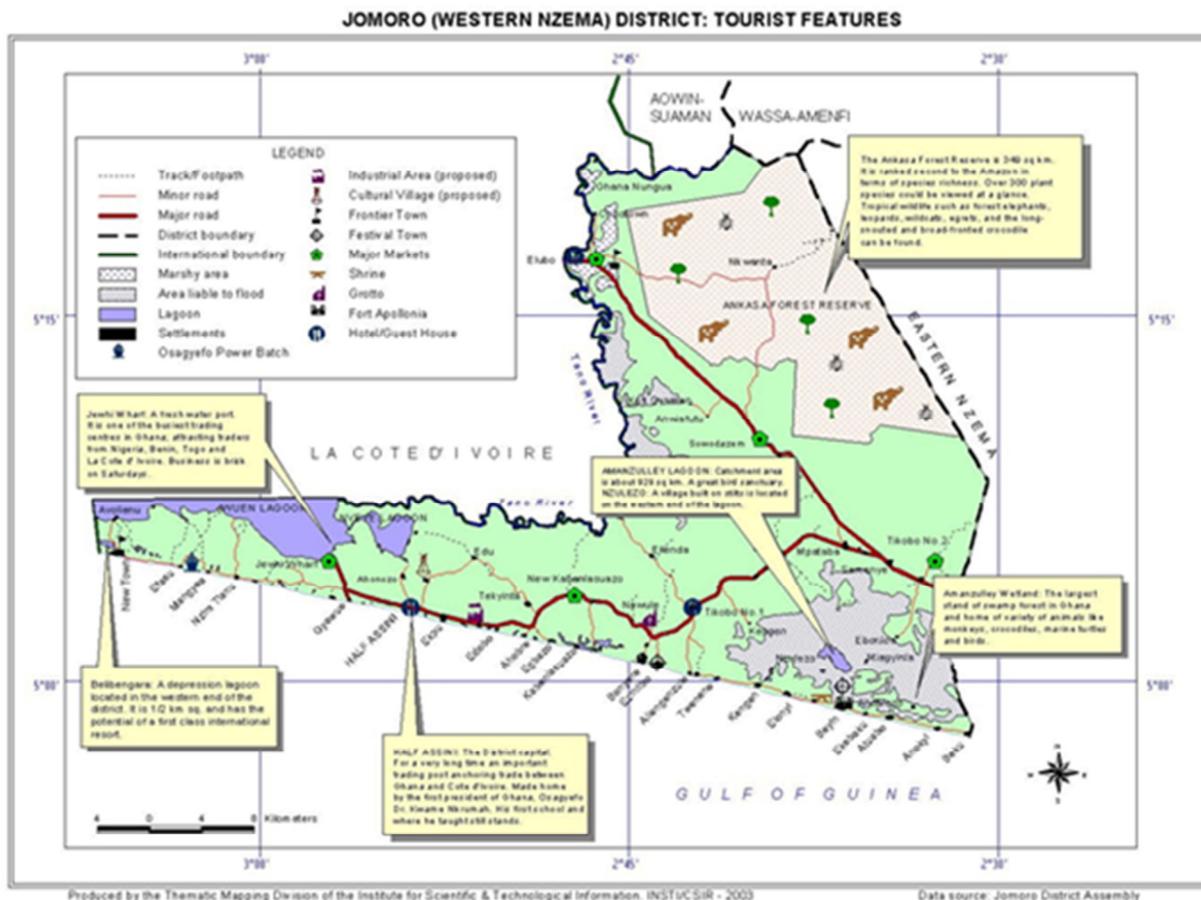


Fig.4 Map showing Tourist Features in the Jomoro District

### Role of GIS/Maps in Tourism Information Packaging in the Jomoro District

The district is endowed with a wide-range of natural, cultural and historical attractions as has been depicted on the map. The ability of GIS to integrate, store and manipulate different data sets both qualitative and quantitative has proved very useful. Information on natural resources, tourist features, infrastructure, like road network, settlements and drainage were displayed together for better land use planning purposes and efficient allocation of resources.

GIS/maps would help in identifying suitable locations for tourism development or investment according to specified criteria for example, whether there are conflicting or complimentary land uses and activities, availability of infrastructure, natural resources etc in order to determine the possibility and the capability of an area to be developed as a tourist destination. Thus, it would offer would be tourism investors at a glance all the factors that would be required to make an informed decision on investment choices.

With this technology, the district Assembly is offered the opportunity to have an idea of the potentials that exist in the district in terms of tourism, infrastructure, natural resources etc, and which areas are lagging behind in development and areas that require further investments and the associated economic benefit that can be derived if all the resources are harnessed properly.

One cannot discount the central role GIS/maps play in the effective packaging, marketing and promotion of tourist information. That is, the map has presented a pictorial view of the interrelationships that exist between two or more phenomena in space. Information such as transportation network, settlements and other natural resources are best visualized and appreciated on the map. The existence of such coherent and basic information on tourist attra

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